[Title of the Document] ABSTRACT

An intake air amount control system for an internal combustion engine, which controls respective amounts of intake air drawn into four cylinders #1 to #4, independently of each other, by variable inter-intake cam phase mechanisms 80, identifies intake air amount variation coefficients Φ#i, based on a model [equation (43)] defining a relationship between an estimated value Gth_est of a TH passing intake air amount and a plurality of simulation values Gcyl_OS#i, such that the estimated value Gth_est becomes equal to the TH passing intake air amount, calculates a target inter-intake cam phase θssi#i_cmd, on a cylinder-by-cylinder basis, according to the identified intake air amount variation coefficients Φ#i (step 81), and calculates control input DUTY_ssi#2 to #4 to the variable inter-intake cam phase mechanisms 80 according to the target inter-intake cam phases θssi#i_cmd (step 75).